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**DRAFT**

# The California Coastal Commission's *Plan for Controlling Polluted Runoff* (Coastal CPR Plan)

**[Plan for the period July 1, 1999 through June 30, 2003]**

## SUMMARY

The mission of the California Coastal Commission is to "protect, conserve, restore, and enhance environmental and human-based resources of the California coast and ocean for environmentally sustainable and prudent use by current and future generations" (Strategic Plan, June 1997). Objective 1.1 of the Commission's Strategic Plan is to "reduce polluted runoff." Polluted runoff, also known as nonpoint source (NPS) [1] pollution, is a significant cause of harmful impacts to coastal waters and habitats, and thus impedes full achievement of the Commission's goals.

The Commission's *Plan for Controlling Polluted Runoff* (*Coastal CPR Plan*), previously entitled the *Polluted Runoff Strategy*, outlines the Commission's authorities to address polluted runoff and identifies actions, with timelines and milestones, to achieve the Commission's objective to reduce polluted runoff. [2] The four program enhancements that comprise the *Coastal CPR Plan* are developed from the Commission's existing and newly developed tools and programs related to the management of polluted runoff. Implementation of the *Coastal CPR Plan* will help to direct Commission staff's efforts to prevent and control polluted runoff, thus leading to improved coastal water quality and enhanced coastal resources and uses.

## PART ONE: INTRODUCTION

### A. BACKGROUND

The California Coastal Act (PRC §§ 30000 *et seq.*) mandates the protection and restoration of coastal waters (Table 1). The Commission certifies Local Coastal Programs (LCPs) and approves coastal development permits (CDPs), energy projects, and federal (federally approved, conducted or funded) projects consistent with these policies. By doing so, the coastal program protects water quality through the management of development that generates runoff or creates spills. The Commission also implements educational and technical assistance programs and coordinates with other agencies to address land-use and development activities that may generate polluted runoff.

[1] A list of abbreviations used in this document is provided in Part Three, Attachment 1.

[2] Information on the Commission's Coastal Nonpoint Pollution Control Program—including the *Coastal CPR Plan*, reports to Commissioners, and links to related information—is available on the Commission Home Page at http://ceres.ca.gov/coastalcomm.

**Table 1.** Coastal Act Policies Relevant to the Control of Polluted Runoff

| § | Summary of Coastal Act Policy |
|---|---|
| 30012 | Carry out a public education program to promote coastal conservation. |
| 30230 | Maintain, enhance, and where feasible restore marine resources. |
| 30231 | Maintain and, where feasible, restore biological productivity and the quality of coastal waters, streams, wetlands, estuaries and lakes through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams. |
| 30232 | Protect against the spillage of crude oil, gas, petroleum products, or hazardous wastes. |
| 30233 | Limit the alteration of wetlands, coastal waters, estuaries; provide for feasible mitigation measures to minimize adverse environmental effects. |
| 30235 | Phase out or upgrade where feasible existing marine structures causing water stagnation contributing to pollution problems and fish kills. |
| 30236 | Limit hydromodification of rivers and streams; channelizations, dams, other substantial alterations of rivers and streams shall incorporate best mitigation measures feasible. |
| 30240 | Protect environmentally sensitive habitat areas (ESHAs). Site and design new development in areas adjacent to ESHAs to prevent significant adverse impacts. |
| 30243 | Protect long-term productivity of soils and timberlands. |
| 30250 | Site and design new development so as to not have significant adverse impacts, either individually or cumulatively, on coastal resources. |
| 30251 | Minimize alteration of natural land forms. |
| 30253 | Assure that new development is stable, has structural integrity, and does not contribute significantly to erosion. |
| 30705 | Control impacts of dredging in specified port areas. |
| 30706 (b) | Minimize harmful effects to coastal waters, including water quality, from the nature, location, and extent of any fill (seaward of the mean high tide line within the jurisdiction of ports), including disposal of dredge spoils, and minimize reductions of volume, surface area, or circulation of water. |
| 30708 (a) and (d) | Locate, design, and construct all port-related development so as to (a) minimize substantial environmental impacts and (d) provide for other beneficial uses consistent with the public trust, including, but not limited to, recreation and wildlife habitat uses, to the extent feasible. |

Nonpoint sources, including natural sources, are the major contributor of pollution to impacted streams, lakes, marine waters, groundwater basins, wetlands and estuaries in California, and are an important contributor of pollution to harbors and bays [California CWA § 305(b) Report on Water Quality, 1998]. Closures of beaches and shellfish beds due to contamination indicate that coastal areas are also affected by polluted runoff. In 1996, 187 beaches were closed or posted, representing 3,118 days of beach closure. Data from the National Shellfish Registry reveal that more than 1,500 acres of potential shellfishing beds were closed in California in 1995. According to the National Oceanic and Atmospheric Administration (NOAA), polluted runoff contributed to 100 percent of these closures.

## B. THE *COASTAL CPR PLAN*

The Commission's *Plan for Controlling Polluted Runoff* (*Coastal CPR Plan*), previously entitled the *Polluted Runoff Strategy*, outlines the Commission's authorities to address polluted runoff and identifies actions to achieve the Commission's objective to reduce polluted runoff. The *Coastal CPR Plan* specifies the Commission's role in addressing polluted runoff within the confines of existing budgets, staffing, and statutory authority.

The *Coastal CPR Plan* is linked to the *Plan for California's Nonpoint Source Pollution Control Program: 1998 –2013* (1998 State NPS Plan) currently being prepared by the staffs of the State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), and Coastal Commission. The Commission, SWRCB, and RWQCB are working together and with other public and private entities to upgrade and implement the State NPS Pollution Control Program for the protection of water quality and to comply with the requirements of the federal Clean Water Act (CWA) and federal Coastal Zone Act Reauthorization Amendments of 1990 (CZARA).[3] The 1998 State NPS Plan includes three elements:

1. *California's Management Measures for Polluted Runoff* (CAMMPR) which identifies management measures appropriate for implementation in California and existing State authorities to implement the management measures.[4] The management measures address six land-use categories: agriculture, forestry, urban areas, marinas and recreational boating, hydromodification, and wetlands and riparian areas (see Part 3, Attachment 3 of this document).

2. A 15-Year Program Strategy: a general strategy to implement, through enforceable policies or mechanisms, the management measures Statewide over a 15-year period.

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[3] Under CZARA, coastal states must enhance cooperation between their land and water use management agencies, identify management measures to prevent and control polluted runoff, and ensure that enforceable mechanisms exist where voluntary efforts are insufficient to restore and protect State waters. California intends to implement a comprehensive State NPS Pollution Control Program under the CWA and CZARA rather than develop a separate new NPS program for the coastal zone. In July 1998, the U.S. Environmental Protection Agency (EPA) and NOAA—the lead federal agencies that administer the CWA and CZARA respectively—conditionally approved California's submittal pursuant to CZARA, and subsequently provided guidance to California regarding elements needed for the State to achieve full approval (see Part Three, Attachment 2 of this document).

[4] Management measures serve as general goals for the control and prevention of polluted runoff; site-specific management practices are used to achieve the goals of each management measure.

3. The first of three 5-Year Implementation Plans: a more specific plan that outlines the State's strategies and priorities for implementing management measures during the next five years.

The 15-Year Strategy and 5-Year Plan also identify a process and actions for six Program Areas—administrative coordination, public participation, technical assistance, critical coastal areas, additional management measures, and monitoring.

Concurrent with the upgrade of the State NPS Pollution Control Program, the Commission staff is conducting numerous efforts to enhance the coastal program's management of polluted runoff. The primary focus of this work is to make the Commission's current operations more effective in addressing land use activities that generate polluted runoff, including obtaining and applying new information. In 1995, staff—with the help of an internal task force and discussions with Commissioners—prepared a strategy to address polluted runoff in the coastal zone that added detail to areas that were not fully described in the CNPCP as originally submitted. The Commission's Management Team approved the *Polluted Runoff Strategy of the California Coastal Commission*, which Commissioners reviewed at the February 1997 public hearing.

The *Strategy*—renamed the *Coastal CPR Plan*—is comprised of four interrelated elements with actions and milestones. The elements are: (1) Implementation of Management Measures through Planning, Regulation, and Technical Assistance; (2) Administrative Coordination; (3) Public Participation and Education; and (4) Funding. Many of the actions identified in the *Coastal CPR Plan* are being incorporated into the 15-Year Program Strategy and 5-Year Implementation Plan elements of the State NPS Pollution Control Program. These actions are expected to help facilitate implementation of the State NPS Pollution Control Program as well as to improve the coastal program's overall treatment of water quality-related issues. Implementation of the *Coastal CPR Plan* will occur over the next four years (1999 through 2002) in order to remain consistent with the timeline of the first 5-Year Implementation Plan outlined in the 1998 State NPS Plan. The 1998 State NPS Plan begins in July 1998—the date of the Final Conditional Approval by EPA and NOAA.

In implementing the *Coastal CPR Plan*, the Commission recognizes the need to use limited resources efficiently as well as to ensure actions are tailored to match the diversity of California's climate and land use activities. Part of this strategy is to focus attention where water quality problems exist and where the coastal program can make a difference in correcting those problems. This involves being able to make informed decisions about the kinds of management actions that are appropriate for development, and being able to forge strong partnerships with the agencies and individuals that must be involved in implementing those actions.

## PART TWO: *COASTAL CPR PLAN* ACTIONS

### Summary: At-A-Glance Matrix of Actions

| | | Management Measure area | | | | | | CZARA Program Area | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Agriculture | Forestry | Urban | Marinas & Boating | Hydromodification | Wetlands and Riparian Areas | Administrative coordination | Public participation | Technical assistance | Critical coastal areas | Additional MMs | Monitoring |
| **1.0** | **Implementation of Management Measures through Planning, Regulation, and Technical Assistance** | | | | | | | | | | | | |
| 1.1 | Implement and periodically update the CCC' s*Coastal CPR Plan*. Provide opportunities for public comment. | | | | | | | x | x | | | | |
| 1.2 | Provide ongoing technical support and coordination to assist CCC and local government staffs in identifying and examining potential water quality impacts of development proposals, and identifying management measures and practices to address the impacts. | x | x | x | x | x | x | x | | x | x | | |
| 1.3 | Track the CCC' s implementation of management measures to control polluted runoff. | x | x | x | x | x | x | | | | | | x |
| 1.4 | Develop a model "Nonpoint Source Element" and guidance for CCC and local government staffs to use when amending, updating, or preparing new LCPs. | x | x | x | x | x | x | x | | x | | | |
| 1.5 | Assist in the development of mapping and other technical analysis tools to make land use and water quality information more accessible to agency staffs and the public. | | | | | | | x | | x | | | |
| 1.6 | Pursue changes to the Checklists in Appendices G and H of the CEQA Guidelines to address and identify polluted runoff as a potential significant environmental effect. | x | x | x | x | x | x | | | x | | | |
| 1.7 | Continue to promote implementation of the Model Urban Runoff Program (MURP). | | | x | | | | x | | x | | | |
| **2.0** | **Administrative Coordination** | | | | | | | | | | | | |
| 2.1 | Continue working with SWRCB, RWQCBs, and other agencies to achieve full approval of, and implement, California' s NPS Program pursuant to the CWA and CZARA. | x | x | x | x | x | x | x | x | x | x | x | x |
| 2.2 | Continue to identify and implement interagency (i.e., local, regional, State and federal) pollution-control projects to implement management measures. | x | x | x | x | x | x | x | | x | | | |
| 2.3 | Conduct periodic meetings over the next 4 years between each CCC district office and the staffs of the six corresponding coastal RWQCBs for the purpose of developing stronger, long-term ties with the RWQCBs. | | | | | | | x | | | | | |
| 2.4 | Incorporate into the Los Angeles Basin Contaminated Sediments Task Force efforts all applicable State NPS strategies to prevent and control polluted runoff. | | | | | x | | x | | | | | |

## PART TWO: *COASTAL CPR PLAN* ACTIONS

### Summary: At-A-Glance Matrix of Actions

| | Management Measure area | | | | | | CZARA Program Area | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Agriculture | Forestry | Urban | Marinas & Boating | Hydromodification | Wetlands and Riparian Areas | Administrative coordination | Public participation | Technical assistance | Critical coastal areas | Additional MMs | Monitoring |
| 2.5 Continue coordination with the Monterey Bay NMS WQPP and pursue opportunities for applying NPS Management Measures through WQPP strategies. | x | x | x | x | x | x | x | x | x | x | x | x |
| 2.6 Assist the Morro Bay NEP and Central Coast RWQCB in preparing a Base Programs Analysis that contains strategies that apply and implement NPS Management Measures. | x | x | x | x | x | x | x | x | x | x | x | x |
| 2.7 Participate in inter agency taskforces and watershed efforts where CCC staff involvement can make a significant impact. | | | | | | | x | x | x | x | | |
| 2.8 Monitor legislation related to the CCC' s polluted-runoff activities and respond to requests for information by legislators, their staffs, other agencies, and the public. | | | | | | | x | | | | | |
| **3.0 Education and Public Participation** | | | | | | | | | | | | |
| 3.1 Work with SWRCB to develop a comprehensive education program for the NPS Program. | x | x | x | x | x | x | x | x | x | x | x | x |
| 3.2 Provide forums to engage the public in implementing California' s NPS Program. | | | | | | | | x | x | | | |
| 3.3 In coordination with the SWRCB and other entities, develop and/or provide educational information on polluted runoff. | x | x | x | x | x | x | x | x | | | | |
| 3.4 Continue to conduct the CCC' s Boating Clean and Green Campaign, and assess program priorities for the future. | | | | x | | | x | x | x | | | |
| 3.5 Continue facilitation of the California Clean Boating Network as a forum to conduct public outreach, manage marina and boating impacts, and assist in developing and implementing State NPS Program management measures and strategies. | | | | x | | | x | x | x | | | |
| **4.0 Funding** | | | | | | | | | | | | |
| 4.1 Submit requests and justifications for State General Fund support of water quality planner positions at the CCC to provide technical review of projects. | | | | | | | x | | x | | | |
| 4.2 Continue on an annual basis over the next 4 years the identification of potential grant and funding sources to support and expand the CCC' s polluted runoff control activities. | | | | | | | x | | x | | | |
| 4.3 Provide funding through the Whale-Tail License Plate and LCP grant programs to implement projects that achieve applicable *Coastal CPR Plan* objectives. | | | x | x | | | | x | | | | x |

## 1.0 Implementation of Management Measures through Planning, Regulation and Technical Assistance

**Objectives:**

A. Coordinate Commission activities related to the prevention and control of polluted runoff.

B. Enhance CCC and local government staff capabilities and expertise to implement polluted-runoff management measures [the *California Management Measures for Polluted Runoff* (CAMMPR) Report identifies 61 management measures to prevent and control polluted runoff].

C. Improve permitting processes—including the review of applications for projects that may generate polluted runoff, as well as post-permit follow-up and condition-compliance review—and facilitate changes in LCPs to address runoff concerns.

D. Provide technical assistance to coastal cities and counties, other agencies, and the public.

| Planning, Regulation and Technical Assistance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Actions** | | **Performance Measures (Products)** | **Years:*** 99 | 00 | 01 | 02 | **Notes** |
| 1.1 | Implement and periodically update the CCC' s *Coastal CPR Plan*. Provide opportunities for public comment. | Annual reports to Coastal Commission. | **x** | **x** | **x** | **x** | • Annual reports and updates are presented at Commission hearings, thus providing opportunities for public comment. The last update was in May 1998. |
| | | Periodic updates of the *Coastal CPR Plan*. | | | | **x** | |
| 1.2 | Provide ongoing technical support and coordination to assist CCC and local government staffs in identifying and examining potential water quality impacts of development proposals, and identifying management measures and practices to address the impacts. | Regular communication between the CCC' s CPR Program staff and district office Water Quality Coordinators (WQCs), including through a newsletter and annual meetings. | **x** | **x** | **x** | **x** | • Actions in CCC' s 1997 CPR Strategy.<br>• Over 200 *CPR Manuals* have been distributed to local, State and federal agency staffs and the public to date.<br>• WQCs were assigned in 1996. In 1996-97, CPR Program staff held workshops for CCC and local government staffs.<br>• In 1997, CCC staff created Summaries for 25 CCAs. The Summaries include maps, watershed group and agency contacts, and information on LCPs, RWQCB Basin Plans, TMDLs, NPDES storm water permits, etc. |
| | | An update of the CCC' s Guidance Manual on polluted-runoff control in the coastal zone to assist staffs in implementing NPS management measures through CDPs, LCPs, and related processes.[4] | **x** | | | | |
| | | An update and distribution of Water Quality Summaries of land use and water quality information in Critical Coastal Areas (CCAs). | **x** | | **x** | | |

[4] The *Procedural Guidance Manual: Addressing Polluted Runoff in the California Coastal Zone: 2nd Edition* (CCC, 1996). [Hereinafter, *CPR Manual*.]

| Planning, Regulation and Technical Assistance | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Actions** | | **Performance Measures (Products)** | **Years:*** 99 | 00 | 01 | 02 | **Notes** |
| 1.3 | Track the CCC's implementation of management measures to control polluted runoff. | Development of runoff-specific tracking elements for the CCC's Permit Tracking System (PTS) and Wetlands Tracking System (WETS), with guidance to staff to track permits, federal consistency projects, and LCP updates/amendments. | | | | **x** | • WETS is a Microsoft Access® database program used to track wetlands-related projects permitted by the CCC. WETS is as an issue-specific component of, and works in conjunction with, the CCC's more general PTS. |
| | | Annual summaries of management measure implementation. [Include summaries in staff's annual reports (see Action 1.1).] | | **x** | **x** | **x** | |
| 1.4 | Develop a model "Nonpoint Source Element" (NPSE) and guidance for CCC and local government staffs to use when amending, updating, or preparing new LCPs. | Matrix, and evaluation for consistency and effectiveness, of grading, zoning, and septic tank policies, ordinances and programs of local governments in the Monterey Bay region (cross-reference with Action 2.5). | **x** | | | | • Action in CCC's 1997 CPR Strategy.<br>• In 1996, CPR Program staff inventoried runoff-related policies and ordinances in 16 LCPs for areas adjacent to State-designated "threatened and impaired water bodies." In 1997, staff piloted a methodology to review LCPs to assess management-measure implementation.<br>• NPSE development will be coordinated with the CCC's Local Assistance Grants and Regional Cumulative Assessment Project (ReCAP) teams. |
| | | Recommendations for policies and ordinances that implement CAMMPR management measures that can be incorporated into LCPs and General Plans. | **x** | | | | |
| | | Update of 1 to 5 LCPs to incorporate a NPSE by end of year 5. | | | | **x** | |
| 1.5 | Assist in the development of mapping and other technical analysis tools to make land use and water quality information more accessible to agency staffs and the public. | Trainings for CCC and other agency staffs to use tools developed through the CCC's Watershed Analysis Tool for Environmental Review (WATER) project and CoastWatch Change Analysis Protocol Project (C-CAP). | | **x** | | | • Action in 1997 CPR Strategy.<br>• In 1997, CCC staff held a workshop for agencies in the Central Coast to distribute WATER compact disks and provide training on their use. The technical skills and professional contacts developed for the WATER project could be used to conduct further trainings and/or produce a similar product for other watersheds. |
| | | Assemble a Geographic Information System (GIS) for another section of the coast, using WATER as the model (pending available funding and staff). | | | | **x** | |

| Planning, Regulation and Technical Assistance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Actions** | | **Performance Measures (Products)** | **Years:*** | | | | **Notes** |
| | | | 99 | 00 | 01 | 02 | |
| 1.6 | Pursue changes to the Checklists in Appendices G and H of the CEQA Guidelines to address and identify polluted runoff (NPS pollution) as a potential significant environmental effect. | A revised CEQA Guidelines Checklist (requires Resources Agency approval). | | x | | | • The 1995 Urban Technical Advisory Committee (TAC) Report and the 1997 Resources Agency Ocean Resources Agenda recommend revising the CEQA Guidelines. In 1998, the CCC submitted a petition, supported by the MURP partners, to the Resources Agency to revise the CEQA Guidelines checklists. |
| | | Inclusion of revised checklists in MURP Manual and *CPR Manual.* | | x | | | |
| 1.7 | Continue to promote implementation of the Model Urban Runoff Program (MURP). | Participation in a joint project with the City of Watsonville and the MBNMS to develop an urban runoff program for Watsonville using the MURP Manual. Refinement of the MURP after completion of the joint project. | x | | | | • Action in 1997 CPR Strategy.<br>• MURP is a how-to-guide for local governments to address polluted runoff in urban areas, that was developed by the Cities of Monterey and Santa Cruz, CCC, Monterey Bay National Marine Sanctuary (MBNMS), Central Coast RWQCB, Association of Monterey Bay Area Governments, and Woodward-Clyde Consultants. Monterey, Santa Cruz and Watsonville are developing runoff programs using MURP. |
| | | Distribution of MURP Manual, on compact disk or paper, to all local governments with LCPs, and placement of MURP on CCC (or other) web site for public use. | x | | | x | |
| | | Assistance in developing a training module for implementing MURP in MBNMS-area cities (cross-reference with Action 2.5). | | | | x | |

## 2.0 Administrative Coordination

**Objectives:**

A. Coordinate the CCC's CPR Program with other State, local, federal and regional programs so that land use activities that generate polluted runoff are more effectively reviewed and addressed.

B. Play a lead role in working with other agencies to coordinate the review of activities in "critical coastal areas" (CCAs). [5]

C. Continue, and where feasible increase, CCC staff involvement in interagency taskforces and watershed management activities.

| Administrative Coordination | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Actions** | | **Performance Measures (Products)** | **Years:*** 99 | 00 | 01 | 02 | **Notes** |
| 2.1 | Continue working with the State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), and other agencies to achieve full approval of, and implement, California's NPS Program pursuant to the CWA and CZARA. | Full approval of the NPS Program pursuant to the CWA and CZARA by the U.S. Environmental Protection Agency (EPA) and National Oceanic and Atmospheric Administration (NOAA). | **x** | | | | • Action in 1997 CPR Strategy (CCC *Coastal CPR Plan* actions are included as elements of the State's 5-year NPS Program Action Plan).<br>• The SWRCB and CCC have worked in partnership since 1991 to develop California's NPS Program. Full approval is expected in 1999.<br>• In 1998-99, the SWRCB and CCC held agency and public meetings on the draft CAMMPR report, 15-year Implementation Strategy, and 5-year Action Plan.<br>• The CCC will evaluate the use of the "Coastal 8" group as a forum to identify and coordinate activities in CCAs. |
| | | Publication of the *California Management Measures for Polluted Runoff* (CAMMPR) Report, 15-year Implementation Strategy, and first 5-year Action Plan. | **x** | | | | |
| | | Coordination in developing agency 5-year Action Plans that may result in cooperative strategies and formal agreements. | — | **x** | | | |
| | | Process to identify Critical Coastal Areas (CCAs), and improve coordination among agencies and the public in these areas. | **x** | | | **x** | |

[5] Critical Coastal Areas (CCAs) are areas adjacent to coastal water bodies that fail to meet water quality standards, or to protect designated beneficial uses, after technology-based management measures have been applied to land uses responsible for the impairment. CCAs will receive more scrutiny through the application of additional management measures. The need for a CNPCP is emphasized by the State's designation of more than 100 water bodies in the coastal zone as "threatened and impaired" by polluted runoff. (This number does not include waters within the jurisdiction of the San Francisco Bay Conservation and Development Commission, or the coastal water bodies that are being considered for listing as threatened and impaired, or for which insufficient information exists to make a designation.)

| Administrative Coordination | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Actions** | | **Performance Measures (Products)** | **Years:*** 99 | 00 | 01 | 02 | **Notes** |
| 2.2 | Continue to identify and implement interagency (i.e., local, regional, State and federal) pollution-control projects to implement management measures. | Application of the Elkhorn Slough model interagency, streamlined permit process coordinated by the Natural Resources Conservation Service (NRCS) to other coastal regions (e.g., Morro Bay and Watsonville Slough watersheds). | **x** | | | **x** | • Action in 1997 CPR Strategy.<br>• The Elkhorn Slough project—~~a~~ 5-year general consistency determination by the NRCS (CD-051-098, May 1998) to implement BMPs on and adjacent to agricultural lands in the Elkhorn Slough watershed—~~a~~ssists land owners to install BMPs to enhance erosion control, pesticide and nutrient management, wetlands conservation and restoration, wildlife habitat protection, flood control and streambank stabilization. The project began in Summer 1998; as of Spring 1999, 20 farms were signed on to implement BMPs. |
| | | Identification of other projects that use the CCC' s authorities (e.g., the federal consistency process) to promote BMP installation in the coastal zone. | | | | **x** | |
| | | Implementation with Caltrans of the Coast Highway Management Plan. | | | | **x** | |
| 2.3 | Conduct periodic meetings over the next 4 years between each CCC district office and the staffs of the six corresponding coastal RWQCBs for the purpose of developing stronger, long-term ties with the RWQCBs. | Periodic meetings between each CCC district office and the staffs of the six corresponding coastal RWQCBs. | **x** | **x** | **x** | **x** | • Action in 1997 CPR Strategy.<br>• CCC district staff have met at least once with RWQCB staff since 1996.<br>• The CCC' s CPR Program staff will help district office staffs to coordinate their meetings with the RWQCB staffs. Discussion topics can include TMDL and NPDES storm water issues. |
| 2.4 | Incorporate into the Los Angeles Basin Contaminated Sediments Task Force (CSTF) efforts all applicable State NPS strategies to prevent and control polluted runoff. | Watershed management and source reduction components of the Contaminated Sediments Long-Term Management Strategy. | | | | **x** | • Under the CSTF (Chapter 897, CWC § 13396.9), the CCC, Los Angeles RWQCB and other entities are developing a long-term management plan for dredging and disposal of contaminated sediments for coastal waters adjacent to LA County. |

| Administrative Coordination | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Actions** | | **Performance Measures (Products)** | **Years:*** 99 | 00 | 01 | 02 | **Notes** |
| 2.5 | Continue coordination with the MBNMS Water Quality Protection Program (WQPP) and pursue opportunities for applying NPS Management Measures through WQPP strategies. | Continued participation in WQPP interagency planning meetings. | | | | **x** | • Action in 1997 CPR Strategy.<br>• The CCC is currently a signatory on the MBNMS WQPP Memorandum of Agreement (MOA). The MOA addresses the implementation of nonpoint source pollution planning and control measures prepared under CZARA § 6217. |
| | | Completion of CCC tasks identified in WQPP Action Plans. | | | | **x** | |
| | | Feasibility study with timeline and milestones needed to establish a WQPP Council or discussion of barriers to establishment. | **x** | | | | |
| | | Feasibility study with timeline and milestones for an alternative financing workshop. | **x** | | | | |
| 2.6 | Assist the Morro Bay National Estuary Program (NEP) and Central Coast RWQCB in preparing a Base Programs Analysis that contains strategies that apply and implement NPS Management Measures. | A final Morro Bay NEP Base Programs Analysis document and future implementation. | | | | **x** | • Action in 1997 CPR Strategy. |
| 2.7 | Participate in inter agency taskforces and watershed efforts where CCC staff involvement can make a significant impact. | Increased CCC staff participation in watershed activities. [Summaries of activities will be included in staff' s annual reports (see Action 1.1).] | | | | **x** | • Action in 1997 CPR Strategy [relates also to Technical Assistance, Education and Public Participation, and Funding elements of the *Coastal CPR Plan*].<br>• This action can facilitate sharing of resources with other federal, State, and local agencies involved in efforts to prevent and control polluted runoff. |
| 2.8 | Monitor legislation related to the CCC' s polluted-runoff activities and respond to requests for information by legislators, their staffs, other agencies, and the public. | Summaries of related legislation will be included in the staff' s annual reports (see Action 1.1). | **x** | **x** | **x** | **x** | • |

## 3.0 Education and Public Participation

**Objective:**

A. Promote coastal stewardship and a more informed citizenry through public education.

B. Engage the public in implementing actions of the CCC's *Coastal CPR Plan* and California's NPS Program.

| Education and Public Participation | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Actions** | | **Performance Measures (Products)** | **Years:*** 99 | 00 | 01 | 02 | **Notes** |
| 3.1 | Work with the SWRCB to develop a comprehensive education program for the NPS Program. | A comprehensive education program for the NPS program. | **x** | | | | • The NPS Program emphasizes education in the State's 5- and 15-year implementation strategies. |
| 3.2 | Provide forums to engage the public in implementing California's NPS Program. | Presentations at CCC hearings, stakeholder workshops, boat shows, environmental fairs, conferences, etc. | **x** | **x** | **x** | **x** | • In 1998-99, CCC staff helped to organize and participated in numerous stakeholder workshops, boat shows, environmental fairs and conferences. |
| | | Communication network to inform stakeholders about opportunities for public participation in the program. | **x** | **x** | **x** | **x** | |
| 3.3 | In coordination with the SWRCB and other entities, develop and/or provide educational information on polluted runoff. | Educational information, NPS links, and list of contacts provided on the CCC web page. | **x** | | | | • The CCC's web page includes sites for the CCC Coastal Nonpoint Pollution Control Program, California Clean Boating Network (CCBN), and Contaminated Sediments Taskforce.<br>• More than 25,000 people annually participate in the Adopt-A-Beach Program which was started in 1985.<br>• Save-Our-Seas Program information is currently provided in Spanish.<br>• Assessments require additional funding.<br>• Installation of additional displays will require additional funding. |
| | | Expansion of Adopt-A-Beach to include a beach monitoring element. | | | | **x** | |
| | | Integration of NPS information into Coastal Access and Resource Guides, Save-Our-Seas Program, and SEACamp curriculum. | | | | **x** | |
| | | Assessment of runoff educational programs in California, including public awareness surveys, and evaluation of effectiveness. | | | | **x** | |
| | | Posting of NPS information in existing displays at coastal access points (e.g., State Parks, piers, and boat ramps), and, where feasible, installation of additional displays. | | | | **x** | |

| Education and Public Participation | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Actions** | | **Performance Measures (Products)** | **Years:*** 99 | 00 | 01 | 02 | **Notes** |
| 3.4 | Continue to conduct the CCC's Boating Clean and Green (BC&G) Campaign, and assess program priorities for the future. | Action Plan for future CCC Boating Campaign. | x | | | | • Action in 1997 CPR Strategy.<br>• The grant-funded BC&G Campaign is scheduled to end in April 2000. The Campaign addresses proper disposal and/or recycling of waste oil at harbors and marinas by providing educational materials and facilitating installation of services needed by boaters in San Diego, Los Angeles, and San Francisco Bay.<br>• Recent work completed includes a *Boating Clean and Green Survey*, the *Used Oil Collection and Related Services for Boaters in SF Bay-Delta* guide, Used Oil Forum in Stockton (10/98) and Boating into the 21st Century Conference in Dana Point (12/98). |
| | | Conferences to provide technical assistance for local assistance for local agencies regarding installing oil-related services for boaters. | | | | x | |
| | | Research of target audience in Southern California to analyze: (1) boater practices that result in hydrocarbon discharges and failure to recycle oil; (2) existing recycling and waste disposal services for boaters; (3) outreach methodologies most likely to succeed for boating. | x | | | | |
| | | Statewide "Dockwalker" trainings (volunteers who distribute information to boaters at the waterfront). | x | x | x | x | |
| 3.5 | Continue facilitation of the California Clean Boating Network (CCBN) as a forum to conduct public outreach, manage marina and boating impacts, and assist in developing and implementing State NPS Program management measures and strategies. | Educational materials including a Catalog of Marina and Boater Pollution Education Materials and *Pollution Solutions* binders that contain exemplary education products that address pollutants associated with marina and boater activities. | | | | x | • Action in 1997 CPR Strategy.<br>• To date, the CCBN has distributed more than 300 copies of the *Pollution Solutions* binders to coastal marinas and interested groups who reproduced the contents for distribution to users of the marina environment.<br>• Vendor workshops can help to promote a better understanding of the need for the construction and maintenance of vessel sewage pumpout facilities, to get greater commitment for constructing pumpouts, and to provide assistance in applying for Clean Vessel Act grant funds. |
| | | A list of options for less toxic products and distribution of the list to marinas, boatyards, and marine products stores. | | x | | | |
| | | Opportunities to provide information related to vessel sewage, including an information "clearinghouse" and vendor workshops. | | | | x | |

## 4.0 Funding

**Objectives:**

A. Seek stable, long-term support of the coastal program' s efforts to improve coastal water quality.

B. Use CCC' s Environmental License Plate and LCP Program grants, where feasible, to fund projects that implement management measures or result in the adoption of policies and ordinances to control polluted runoff.

| Funding | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Actions | | Performance Measures (Products) | Years:* 99 | 00 | 01 | 02 | Notes |
| 4.1 | Submit requests and justifications for State General Fund support of water quality planner positions at the CCC to provide technical review of projects submitted to the Commission. | Budget Change Proposals (BCPs) as needed. | x | | | | • Action in 1997 CPR Strategy. |
| 4.2 | Continue on an annual basis over the next 4 years the identification of potential grant and funding sources to support and expand the CCC' s polluted runoff control activities. | Development of appropriate grant proposals with notification to Coastal Commission on grants received. [A report on grants received will be included in staff' s annual reports (see Action 1.1).] | x | x | x | x | • Action in 1997 CPR Strategy..<br>• CCC activities to control polluted runoff have been enhanced by grants from NOAA, EPA, SWRCB, RWQCB, Resources Agency, Integrated Waste Management Board, and others. |
| 4.3 | Provide funding through the Whale-Tail License Plate and LCP grant programs to implement projects that achieve applicable *Coastal CPR Plan* objectives. | Grants for projects that result in the implementation of education management measures for the control of polluted runoff. [A report on grants issued will be included in staff' s annual reports (see Action 1.1).] | | | | x | |

**PART THREE: ATTACHMENTS**

**Attachment 1**

## List of Abbreviations

**BC&G** – Boating Clean and Green

**BMP** – Best Management Practice

**CAMMPR** – *California's Management Measures for Polluted Runoff*

**CCA** – Critical Coastal Area

**CCBN** – California Clean Boating Network

**CCC** – California Coastal Commission

**CDP** – Coastal Development Permit

**CEQA** – California Environmental Quality Act

**CNPCP** – Coastal Nonpoint Pollution Control Program

**CPR** –Controlling Polluted Runoff

**CWA** – Clean Water Act (Federal)

**CWC** – California Water Code

**CZARA** – Coastal Zone Act Reauthorization Amendments of 1990

**CZMA** – Coastal Zone Management Act

**EPA** – U.S. Environmental Protection Agency

**ESHA** – Environmentally Sensitive Habitat Area

**LCP** – Local Coastal Program

**MBNMS** – Monterey Bay National Marine Sanctuary

**MM** – Management Measure

**MURP** – Model Urban Runoff Program

**NEP** – National Estuary Program

**NMS** – National Marine Sanctuary

**NOAA** – National Oceanic and Atmospheric Administration

**NPDES** – National Pollutant Discharge Elimination System

**NPS** – Nonpoint source

**NPSE** – Nonpoint Source Element

**PRC** – Public Resources Code

**PTS** – Permit Tracking System

**ReCAP** – Regional Cumulative Assessment Project

**RWQCB** – Regional Water Quality Control Board

**SWRCB** – State Water Resources Control Board

**TMDL** – Total Maximum Daily Load

**USC** – United States Code

**WATER** – Watershed Analysis Tool for Environmental Review

**WETS** – Wetlands Tracking System

**WQC** – Water Quality Coordinator

**WQPP** – Water Quality Protection Program

**Attachment 2**

## Summary of Federal Findings: California's NPS Program (July 1998)

| Element | Findings | Conditions/Timeline (if any) | |
|---|---|---|---|
| **Agriculture** | ❒ **Conditioned.**<br>• CA includes a confined animal facility MM that is in conformity with the CZARA § 6217(g) Guidance and enforceable policies and mechanisms to implement the MM. CA does not include MMs in conformity with (g) Guidance for other agriculture subcategories.<br>• CA identifies backup enforceable authorities for implementation, but does not demonstrate ability of the authorities to ensure widespread implementation throughout the § 6217 management area. | • CA will include MMs in conformity with the (g) Guidance for all agricultural categories.<br>• CA will develop a strategy to implement MMs throughout the § 6217 management area. | JULY 2000 (2 years)<br>DEC 1999* (1 year) |
| **Forestry** | ☑ **Approved.** CA includes MMs for Forestry that are in conformity with the CZARA § 6217(g) Guidance, and enforceable policies/mechanisms for implementation. However, additional MMs are necessary to attain and maintain water quality standards (see Additional Management Measures). | | |
| **Urban Development** | ❒ **Conditioned.**<br>• CA does not include MMs in conformity with the CZARA § 6217(g) Guidance.<br>• CA identifies a back-up enforceable authority/ mechanism but does not demonstrate the authority's ability to ensure implementation throughout the § 6217 management area. | • CA will include MMs in conformity with the (g) Guidance.<br>• CA will develop a strategy to implement MMs throughout the § 6217 management area. | JULY 2000<br>DEC 1999 |
| **Marinas and Recreational Boating** | ❒ **Conditioned.**<br>• CA does not include MMs in conformity with the CZARA § 6217(g) Guidance.<br>• CA includes enforceable policies/mechanisms to: (1) address the Siting/Design MMs, but cannot ensure implementation for all marinas; and (2) implement some Operation/Maintenance MMs–and identifies a backup enforceable policy/mechanism–but has not demonstrated the authority's ability to ensure imple-mentation throughout the § 6217 management area. | • CA will include MMs in conformity with the (g) Guidance.<br>• CA will develop a strategy to implement MMs throughout § 6217 management area. | JULY 2000<br>DEC 1999 |

* The July 1998 NOAA and EPA Findings had a one-year deadline (until July 1999) for California to comply with several of the conditions. NOAA and EPA are now providing additional time, generally on the order of six months, to meet the 1-year conditions (Letter from Joseph A. Uravitch, NOAA and Dov Weitman, EPA, March 11, 1999.) The Clinton Administration's Clean Water Action Plan also specifies a December 1999 deadline for full approval of state coastal nonpoint programs.

| Element | Findings | Conditions/Timeline (if any) | |
|---|---|---|---|
| **Hydromodi-fication** | ❒ **Conditioned.**<br>• CA does not include MMs in conformity with the CZARA § 6217(g) Guidance.<br>• CA identifies a back-up enforceable authority/mechanism but does not demonstrate the authority's ability to ensure implementation throughout the § 6217 management area. | • CA will include MMs in conformity with the (g) Guidance.<br>• CA will develop a strategy to implement MMs throughout the § 6217 management area. | JULY 2000<br>DEC 1999 |
| **Wetlands, Riparian Areas, & Vegetated Treatment Systems (VTSs)** | ❒ **Conditioned.**<br>• CA includes MMs in conformity with the CZARA § 6217(g) Guidance to promote wetland/riparian area restoration and use of VTSs but CA does not include MMs for wetland/riparian area protection.<br>• CA identifies a back-up enforceable authority/ mechanism but does not demonstrate the authority's ability to ensure implementation throughout the § 6217 management area. | • CA will include MMs in conformity with the (g) Guidance.<br>• CA will develop a strategy to implement MMs throughout the § 6217 management area. | JULY 2000<br>DEC 1999 |
| **Administrative Coordination** | ❒ **Conditioned.**<br>CA does not include adequate mechanisms to improve coordination among State agencies and between State/local officials to implement CNPCP. | CA will include mechanisms to ensure coordination among agencies and State/local officials. | DEC 1999 |
| **Public Participation** | ☑ **Approved.**<br>CA provides opportunities for public participation in CNPCP development and implementation. | | |
| **Technical Assistance** | ❒ **Conditioned.**<br>CA does not include programs that will provide technical assistance to local governments and the public for implementing additional MMs. | CA will develop new, and/or expand existing, programs to provide technical assistance | July 2001 |
| **Critical Coastal Areas** | ❒ **Conditioned.**<br>CA does not identify and include a process for the continuing identification of CCAs adjacent to impaired and threatened coastal waters. | CA will identify CCAs beyond the coastal zone and within watersheds draining into Monterey Bay. | DEC 1999 |
| **Additional Management Measures** | ❒ **Conditioned.**<br>CA does not provide for the identification of additional MMs and the continuing revision of MMs applicable to CCAs and cases where the CZARA § 6217(g) MMs are implemented but water quality threats or impairments persist | CA shall:<br>• develop a process to apply additional MMs in CCAs and in areas where necessary to attain and maintain water quality standards.<br>• identify additional MMs for forestry necessary to attain and maintain water quality standards. | JULY 2000<br>DEC 1999 |
| **Monitoring** | ❒ **Conditioned.**<br>CA does not include a plan to assess over time the extent to which implementation of the MMs is in reducing pollution loads and improving water quality. | CA will include a plan for assessing over time the success of the MMs in reducing pollution loads and improving water quality | DEC 1999 |

| Element | Findings | Conditions/Timeline (if any) |
|---|---|---|
| **Strategy and Evaluation for Back-up Authorities** | ❒ **Conditioned.** CA will develop a strategy to implement, throughout the § 6217 management area, the MMs for agriculture, urban areas, marinas, hydromodification, and wetlands. | DEC 1999 |
| **Boundary** | ☑ **Approved.** CA includes the entire State as the management area within which it will implement its NPS Program; this boundary is sufficient to control the land and water uses that have or are reasonably expected to have a significant impact on coastal waters. | |

**Attachment 3**

# CAMMPR Quick Reference Guide

## Background

Degradation of water resources from nonpoint source (NPS) pollution is considered to be the leading cause of water quality impairments both nationally and in California. Most NPS problems are related to land use practices. In California, numerous State, federal and local agencies, as well as landowners and non-governmental organizations (NGOs), are involved with efforts to prevent or control NPS pollution. These efforts are often supported by and coordinated through California's NPS Program under the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs), and through the California Coastal Commission's (CCC) Coastal Nonpoint Pollution Control Program. The goals of current efforts are to upgrade the State's NPS Management Plan consistent with the guidance of the U.S. Environmental Protection Agency (USEPA),[1] and to ensure that the Plan effectively addresses nonpoint sources affecting coastal waters as required by Section 6217 of the 1990 Coastal Zone Act Reauthorization Amendments (CZARA).

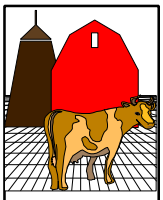
## Implementation of Management Measures

CZARA requires coastal states to develop and implement management measures for NPS pollution to restore and protect coastal waters.[2] The management measure approach is technology-based rather than water-quality-based. The management measures are organized into six categories or "sectors":

(1) Agriculture;
(2) Forestry (Silviculture);
(3) Urban Areas;
(4) Marinas and Recreational Boating;
(5) Hydromodification Activities; and
(6) Wetlands, Riparian Areas, and Vegetated Treatment Systems.

All six categories are present in California.

**Fact Sheets**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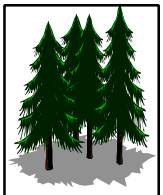
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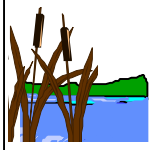
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[1] California's NPS Program was established more than ten years ago in response to the requirements of federal Clean Water Act § 319(h). The federal Clean Water Action Plan calls on all states to upgrade their NPS Programs in order to be eligible for additional funding in federal fiscal year 2000 and beyond.

[2] Management measures are defined in CZARA § 6217(g)(5) as "economically achievable measures for the control of the addition of pollutants from existing and new categories and classes of nonpoint sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods, or other alternatives." The USEPA § 6217(g)-Guidance lists 56 management measures to control or prevent NPS pollution affecting coastal waters (these measures can be viewed at http://www.epa.gov/OWOW/NPS/MMGI).

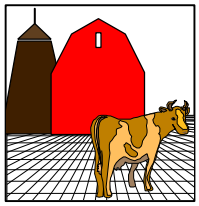
The management measures form the core of the State's upgraded NPS Management Plan, and provide goals to which various management practices are applied. The SWRCB, CCC and other State agencies are developing a *Management Measure Review Document* that delineates each management measure as applicable in California. The original CZARA § 6217(g) management measure language has been retained for nearly all of the management measures. California has modified the management measure language only slightly; in almost all cases the modifications have made the management measures more protective of the environment. The SWRCB, CCC and each of the Regional Water Quality Control Boards evaluated each management measure. In addition, each state agency that was designated in the document evaluated the management measures for appropriateness for California. California has included an additional management measure for education and outreach to each nonpoint source category to reflect the State's intention to promote public awareness and involvement in controlling nonpoint source pollution. This brings the total number of management measures in California to 60. Background information on these management measures is provided in the attached Fact Sheets.

Not all of the identified management measures may be needed to address the nonpoint sources at a specific site. For example, forestry and construction operations that do not use chemicals would not need to implement chemical-control management measures. Similarly, farms or other agriculture enterprises that do not have animals as part of the enterprise would not need to implement the management measures that address confined animal facilities or grazing. Other operations will have more than one source to address and may need to employ two or more measures to address the multiple sources. Application of the measures should be coordinated to produce an overall system that adequately addresses all sources for the site in a cost-effective manner.

Many operations may already be in compliance with the measures needed to address the nonpoint sources associated with them. Existing NPS progress will be recognized and appropriate credit given for a practice that is in existence and operational. Existing practices, plans, and systems should be viewed as building blocks for the management measures and may need no additional improvement. For cases where existing source control is inadequate to achieve conformity with the needed management measures, only one or two more practices may need to be added to achieve conformity.

Finding solutions to NPS pollution poses unique challenges. While increased use of existing regulatory authorities can help to address certain categories of NPS pollution (such as the relatively recent effort to issue permits for the most significant municipal stormwater discharges), California will need to rely on a wide range of tools, activities, and authorities to effectively address NPS pollution statewide. In particular, these efforts need to focus on better integration and coordination at the State level and collaborative approaches to establish ongoing community-based stewardship.

# CAMMPR FACT SHEET No. 1
## Agriculture Management Measures



The SWRCB, CCC, and other State agencies have identified seven management measures (MMs) to address agricultural nonpoint sources of pollution that affect State waters. The agricultural MMs include practices and plans installed under various NPS programs in California, including systems of practices commonly used and recommended by the U.S. Department of Agriculture (USDA) as components of Resource Management Systems, Water Quality Management Plans and Agricultural Waste Management Systems.

**California's agriculture management measures:**

**1.A Erosion and Sediment Control**

**1.B Facility Wastewater and Runoff from Confined Animal Facilities**

**1.C Nutrient Management**

**1.D Pesticide Management**

**1.E Grazing Management**

**1.F Irrigation Water Management**

**1.G Education/Outreach**

According to the USEPA (1993), agriculture contributes more than half of the pollution entering the Nation's waterbodies; recent studies have identified it as the greatest source of water pollution in the United States. The primary agricultural NPS pollutants are nutrients, sediment, animal wastes, pesticides, and salts. Agricultural activities may also affect habitat through physical disturbances caused by livestock or equipment, or through the management of water.

**Management Measures:**

- **Erosion and Sediment Control.** MM 1A addresses NPS problems associated with soil erosion and sedimentation. Where erosion and sedimentation from agricultural lands affects coastal waters, landowners shall design and install a combination of practices to remove solids and associated pollutants in runoff during all but the larger storms. Alternatively, landowners may apply the erosion component of a Conservation Management System (CMS) as defined in the USDA Field Office Technical Guide.

- **Facility Wastewater and Runoff from Confined Animal Facilities.** Pursuant to MM 1B, facility wastewater and contaminated runoff from confined animal facilities must be contained at all times. Storage facilities should be of adequate capacity to allow for proper waste water use and should be constructed so they prevent seepage to ground water, and stored runoff and accumulated solids from the facility shall be managed through a waste use system that is consistent with MM 1C.

- **Nutrient Management.** MM 1C addresses the development and implementation of comprehensive nutrient management plans for areas where nutrient runoff is a problem affecting coastal waters. Such plans would include a crop nutrient budget; identification of the types, amounts and timing of nutrients necessary to produce a crop based on realistic crop yield expectations; identification of hazards to the site and adjacent environment; soil sampling and tests to

determine crop nutrient needs; and proper calibration of nutrient equipment. When manure from confined animal facilities is to be used as a soil amendment and/or is disposed of on land, the plan shall discuss steps to assure that subsequent irrigation of that land does not leach excess nutrients to surface or ground water.

- **Pesticide Management.** Implementation of MM 1D is intended to reduce contamination of surface water and ground water from pesticides. Elements of this measure include reductions in pesticide use; evaluation of pest, crop and field factors; use of Integrated Pest Management (IPM); consideration of environmental impacts in choice of pesticides; calibration of equipment; and use of anti-backflow devices. IPM is a key component of pest control. IPM strategies include evaluating pest problems in relation to cropping history and previous pest control measures, and applying pesticides only when an economic benefit will be achieved. Pesticides should be selected based on their effectiveness to control target pests and environmental impacts such as their persistence, toxicity, and leaching potential.

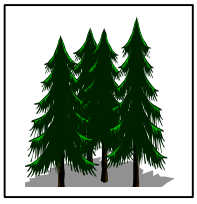
- **Grazing Management.** MM 1E is intended to protect sensitive areas (including streambanks, lakes, wetlands, estuaries, and riparian zones) by reducing direct loadings of animal wastes and sediment. Upland erosion can be reduced by, among other methods: (1) maintaining the land consistent with the California Rangeland Water Quality Management Plan or Bureau of Land Management and Forest Service activity plans or (2) applying the range and pasture components of a Conservation Management System. This may include restricting livestock from sensitive areas by providing livestock stream crossings and by locating salt, shade, and alternative drinking sources away from sensitive areas.

- **Irrigation Water Management.** MM 1F promotes effective irrigation while reducing pollutant delivery to surface and ground waters. Pursuant to this measure, irrigation water would be applied uniformly based on an accurate measurement of cropwater needs and the volume of irrigation water applied, considering limitations raised by such issues as water rights, pollutant concentrations, water delivery restrictions, salt control, wetland, water supply and frost/freeze temperature management. Additional precautions would apply when chemicals are applied through irrigation.

- **Education/Outreach.** The goal of MM 1G is to implement pollution prevention and education programs to reduce NPS pollutants generated from the following activities as applicable:
    a. Activities that cause erosion and loss of sediment on agricultural land and land that is converted from other land uses to agricultural land;
    b. Activities that cause discharge from confined animal facilities to surface waters;
    c. Activities that cause excess delivery of nutrients and/or leaching of nutrients;
    d. Activities that cause contamination of surface water and ground water from pesticides;
    e. Grazing activities that cause physical disturbance to sensitive areas and the discharge of sediment, animal waste, nutrients, and chemicals to surface waters;
    f. Irrigation activities that cause NPS pollution of surface waters.

# CAMMPR FACT SHEET No. 2

## Forestry (Silviculture) Management Measures



The SWRCB, CCC, and other State agencies have identified 12 management measures (MMs) to address various phases of forestry operations relevant to controlling nonpoint sources of pollution that affect State waters. The forestry MMs are for the most part a system of practices used and recommended by the Board of Forestry and Department of Forestry and Fire Protection in rules or guidance.

**California's forestry (silviculture) management measures:**

**2.A Preharvest Planning**
**2.B Streamside Management Areas**
**2.C Road Construction/Reconstruction**
**2.D Road Management**
**2.E Timber Harvesting**
**2.F Site Preparation/Forest Regeneration**
**2.G Fire Management**
**2.H Revegetation of Disturbed Areas**
**2.I Forest Chemical Management**
**2.J Wetlands Forest**
**2.K Education/Outreach**
**2.L Postharvest Evaluation**

On a national level, silviculture contributes approximately 3 to 9% of NPS pollution to the Nation's waters (USEPA, 1992a). Without adequate controls, forestry operations may degrade the characteristics of waters that receive drainage from forest lands. For example (1) sediment concentrations can increase due to accelerated erosion, (2) water temperatures can increase due to removal of overstory riparian shade, (3) dissolved oxygen can be depleted due to the accumulation of slash and other organic debris, and (4) concentrations of organic and inorganic chemicals can increase due to harvesting and fertilizers and pesticides.

**Management Measures:**

- **Preharvest Planning.** Pursuant to MM 2A, silvicultural activities shall be planned to reduce potential delivery of pollutants to surface waters. Components of MM 2A address aspects of forestry operations, including: the timing, location and design of harvesting and road construction; site preparation; identification of sensitive or high-erosion risk areas; and the potential for cumulative water quality impacts.

- **Streamside Management Areas (SMAs).** SMAs protect against soil disturbance and reduce sediment and nutrient delivery to waters from upland activities. MM 2B is intended to safeguard vegetated buffer areas along surface waters to protect the water quality of adjacent streams.

- **Road Construction/Reconstruction.** Pursuant to MM 2C, road construction/reconstruction shall be conducted so as to reduce sediment generation and delivery. This can be accomplished by, following preharvest plan layouts and designs for road systems, incorporating adequate drainage structures, properly installing stream crossings, avoiding road construction in SMAs, removing debris from streams, and stabilizing areas of disturbed soil such as road fills.

- **Road Management.** MM 2D describes how to manage roads to prevent sedimentation, minimize erosion, maintain stability, and reduce the risk that drainage structures and stream crossings will fail or become less effective. Components of this measure include inspections and maintenance actions to prevent erosion of road surfaces and to ensure the effectiveness of stream-crossing structures, and appropriate methods for closing roads that are no longer in use.

- **Timber Harvesting.** MM 2E addresses skidtrail location and drainage, management of debris and petroleum, and proper harvesting in SMAs. Timber harvesting practices that protect water quality and soil productivity also have economic benefits by reducing the length of roads and skidtrails, reducing equipment and road maintenance costs, and providing better road protection.

- **Site Preparation & Forest Regeneration.** Impacts of mechanical site preparation and regeneration operations—particularly in areas with steep slopes or highly erodible soils, or where a site is in close proximity to a waterbody—can be reduced by confining runoff onsite. MM 2F addresses keeping slash material out of drainageways, operating machinery on contours, timing activities, and protecting ground cover in ephemeral drainage areas and SMAs. Careful regeneration of harvested forest lands is important in protecting water quality from disturbed soils.

- **Fire Management.** Prescribed fire practices for site preparation and methods to suppress wildfires should as feasible be conducted in a manner that limits loss of soil organic matter and litter and that reduces the potential for runoff and erosion. Fires on steep slopes or adjacent to streams and that remove forest litter down to mineral soil are most likely to impact water quality.

- **Revegetation of Disturbed Areas.** MM 2H addresses the rapid revegetation of areas disturbed during timber harvesting and road construction—particularly areas within harvest units or road systems where mineral soil is exposed or agitated (e.g., road cuts, fill slopes, landing surfaces, cable corridors, or skidtrails) with special priority for SMAs and steep slopes near drainageways.

- **Forest Chemical Management.** Application of pesticides, fertilizers, and other chemicals used in forest management should not lead to surface water contamination. Pesticides must be properly mixed, transported, loaded, and applied, and their containers disposed of properly. Fertilizers must also be properly handled and applied since they also may be toxic depending on concentration and exposure. Components of MM 2I include applications by skilled workers according to label instructions, prescription of the type and amount of chemical to be applied, use of buffer areas for surface waters to prevent direct application or deposition, and spill contingency planning.

- **Wetland Forest Management.** Forested wetlands provide many beneficial water quality functions and provide habitat for aquatic life. Activities in wetland forests shall be conducted to protect the aquatic functions of forested wetlands.

- **Postharvest Evaluation.** The goal of MM 2K is to incorporate postharvest monitoring, including: a) implementation monitoring to determine if the operation was conducted according to specifications, and b) effectiveness monitoring after at least one winter period to determine if the specified operation prevented or minimized discharges.

- **Education/Outreach.** The goal of MM 2L is to implement pollution prevention and education programs to reduce NPS pollutants generated from applicable silvicultural activities.

# CAMMPR FACT SHEET No. 3

## Urban Management Measures

The SWRCB, CCC, and other State agencies have identified 15 management measures (MMs) to address urban nonpoint sources of pollution that affect State waters. With approximately 80% of the nation's population living in coastal areas, controlling polluted runoff in urban areas is a challenge. Negative impacts of urbanization on coastal and estuarine waters are well documented in a number of sources, including California's Clean Water Act §305(b) and §319 reports and the Nationwide Urban Runoff Program.

Major pollutants found in runoff from urban areas include sediment, nutrients, oxygen-demanding substances, road salts, heavy metals, petroleum hydrocarbons, pathogenic bacteria, and viruses. Suspended sediments constitute the largest mass of pollutant loadings to receiving waters from urban areas. Construction is a major source of sediment erosion. Petroleum hydrocarbons result mostly from automobile sources. Nutrient and bacterial sources include garden fertilizers, leaves, grass clippings, pet wastes, and faulty septic tanks. As population densities increase, a corresponding increase occurs in pollutant loadings generated from human activities. Many of these pollutants enter surface waters via runoff without undergoing treatment.

**California's urban management measures:**

**3.1 Runoff from Developing Areas**
- **A. Watershed Protection**
- **B. Site Development**
- **C. New Development**

**3.2 Runoff from Construction Sites**
- **A. Construction Site Erosion and Sediment Control**
- **B. Construction Site Chemical Control**

**3.3 Runoff from Existing Development**
- **A. Existing Development**

**3.4 Onsite Disposal Systems (OSDSs)**
- **A. New OSDSs**
- **B. Operating OSDSs**

**3.5 Transportation Development (Roads, Highways, and Bridges)**
- **A. Planning, Siting, and Developing Roads and Highways**
- **B. Bridges**
- **C. Construction Projects**
- **D. Chemical Control**
- **E. Operation and Maintenance**
- **F. Road, Highway, and Bridge Runoff Systems**

**3.6 Education/Outreach**
- **A. Pollution Prevention/Education: General Sources**

Urban runoff management requires that several objectives be pursued simultaneously. These objectives include the following (American Public Works Association, 1981):

- Protection and restoration of surface waters by the minimization of pollutant loadings and negative impacts resulting from urbanization;
- Protection of environmental quality and social well-being;
- Protection of natural resources, e.g., wetlands and other important aquatic and terrestrial ecosystems;

- Minimization of soil erosion and sedimentation problems;
- Maintenance of the predevelopment hydrologic conditions;
- Protection of ground-water resources;
- Control and management of runoff to reduce or prevent flooding; and
- Management of aquatic and riparian resources for active and passive.

**Management Measures:**

The control of urban NPS pollution requires the use of two primary strategies: the prevention of pollutant loadings and the treatment of unavoidable loadings. California's urban management measures are organized to parallel the land use development process in order to address the prevention and treatment of NPS pollution loadings during all phases of urbanization; this strategy relies primarily on the watershed approach, which focuses on pollution prevention or source reduction practices. A combination of pollution prevention and treatment practices is favored because planning, design, and education practices are generally more effective, require less maintenance, and are more cost-effective in the long term.

The major opportunities to control NPS loadings occur during the following three stages of development: (1) the siting and design phase, (2) the construction phase, and (3) the post-development phase. Before development occurs, land in a watershed is available for a number of pollution prevention and treatment options, such as setbacks, buffers, or open space requirements, as well as wet ponds or constructed urban runoff wetlands that can provide treatment of the inevitable runoff and associated pollutants. In addition, siting requirements and restrictions and other land use ordinances, which can be highly effective, are more easily implemented during this period. After development occurs, these options may no longer be practicable or cost-effective. MMs 3.1A through 3.1C address the strategies and practices that can be used during the initial phase of the urbanization process.

The control of construction-related sediment loadings is critical to maintaining water quality. The implementation of proper erosion and sediment control practices during the construction stage can significantly reduce sediment loadings to surface waters. MMs 3.2A and 3.2B address construction-related practices.

After development has occurred, lack of available land severely limits the implementation of cost-effective treatment options. MM 3.6A focuses on improving controls for existing surface water runoff through pollution prevention to mitigate nonpoint sources of pollution generated from ongoing domestic and commercial activities.

## CAMMPR FACT SHEET No. 4

# Marinas & Recreational Boating Management Measures

The SWRCB, CCC, and other State agencies have identified 17 management measures (MMs) to address marina and recreational boating sources of nonpoint pollution. Because marinas are located at the water's edge, pollutants generated from marinas and boats are less likely to be buffered or filtered by natural processes. When boating and related activities (e.g., marinas and boat maintenance areas) are poorly planned or managed, they may threaten the health of aquatic systems and pose other environmental hazards. The USEPA (1993) identifies several sources of pollution associated with marinas and boating activities:

- Poorly flushed waterways;
- Pollutants discharged from boats (recreational boats, commercial boats, and "live-aboards");
- Pollutants carried in stormwater runoff;
- Physical alteration of wetlands and of shellfish/ other benthic communities during construction of marinas, ramps, and related facilities;
- Pollutants generated from boat maintenance activities on land and in the water.

**California's marina and recreational boating management measures:**

**4.1 <u>Assessment, Siting and Design</u>**
- **A. Water Quality Assessment**
- **B. Marina Flushing**
- **C. Habitat Assessment**
- **D. Shoreline Stabilization**
- **E. Storm Water Runoff**
- **F. Fueling Station Design**
- **G. Sewage Facilities**
- **H. Waste Management Facilities**

**4.2 <u>Operation and Maintenance</u>**
- **A. Solid Waste Control**
- **B. Fish Waste Control**
- **C. Liquid Material Control**
- **D. Petroleum Control**
- **E. Boat Cleaning and Maintenance**
- **F. Maintenance of Sewage Facilities**
- **G. Boat Operation**

**4.3 <u>Education/Outreach</u>**
- **A. Public Education**

California's management measures are intended to be applied to control impacts to water quality and habitat from marina siting and construction (new <u>and</u> expanding marinas), and marina and boat operation and maintenance. The measures are designed to reduce NPS pollution by requiring the best possible siting for marinas and maintenance areas, providing for the best available design and construction practices and appropriate operation and maintenance practices, and encouraging the development and use of effective pollution control and education efforts. The management measures cover the following operations and facilities (USEPA, 1993):

- Any facility that contains 10 or more slips, piers where 10 or more boats may tie up, or any facility where a boat for hire is docked;
- Any residential or planned community marina with 10 or more slips;
- Any mooring field where 10 or more boats are moored;
- Public or commercial boat ramps;
- Boat maintenance or repair yards that are adjacent to the water, and any Federal, State, or local facility that involves recreational boat maintenance or repair on or adjacent to the water.

**Assessment, Siting and Design Management Measures:**

- **Water Quality Assessment** — Consider impacts to water quality in siting and designing new and expanding marinas.
- **Marina Flushing** — Site and design marinas to provide for maximum flushing and circulation of surface waters, which can reduce the potential for water stagnation, maintain biological productivity, and reduce the potential for toxic accumulation in bottom sediment.
- **Habitat Assessment** — Site and design marinas to protect against adverse impacts on fish and shellfish, aquatic vegetation, and important local-, State-, or federal-designated habitat areas.
- **Shoreline Stabilization** — Stabilize shorelines where shoreline erosion is a pollution problem.
- **Storm Water Runoff** — Implement runoff control strategies to remove at least 80% of suspended solids from storm water runoff coming from boat maintenance areas (some boat yards may conform to this provision through NPDES permits).
- **Fueling Station Design** — Locate and design fueling stations to contain accidental spills; provide containment equipment and spill contingency plans to ensure quick spill response.
- **Sewage Facilities** — Install pumpout, pump station, and restroom facilities at new and expanding marinas where needed to prevent sewage discharges directly to State waters.
- **Waste Management Facilities** — Install facilities at new and expanding marinas where needed for the proper recycling or disposal of solid wastes (e.g., oil filters, lead acid batteries, used absorbent pads, spent zinc anodes, and fish waste as applicable) and liquid materials (e.g., fuel, oil, solvents, antifreeze, and paints).

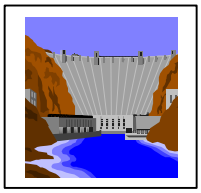
**Operation and Maintenance Management Measures:**

- **Solid Waste Control** — Properly dispose of solid wastes produced by the operation, cleaning, maintenance, and repair of boats to limit entry of these wastes to surface waters.
- **Fish Waste Control** — Promote sound fish waste management, where fish waste is a NPS problem, through a combination of fish cleaning restrictions, education, and proper disposal.
- **Liquid Material Control** — Provide and maintain the appropriate storage, transfer, containment, and disposal facilities for liquid materials commonly used in boat maintenance, and encourage recycling of these materials.
- **Petroleum Control** — Reduce the amount of fuel and oil that leaks from fuel tanks and tank air vents during the refueling and operation of boats.
- **Boat Cleaning and Maintenance** — Minimize the use of potentially harmful hull cleaners and bottom paints, and prohibit discharges of these substances to State waters.
- **Maintenance of Sewage Facilities** — Maintain pumpout facilities in operational condition and encourage their use so as to prevent and control untreated sewage discharges to surface waters.
- **Boat Operation** — Prevent turbidity and physical destruction of shallow-water habitat resulting from boat wakes and propwash.

**Education and Outreach Management Measures:**

- **Public Education** — Institute public education, outreach, and training programs to prevent and control improper disposal of pollutants into State waters.

# CAMMPR FACT SHEET No. 5
## Hydromodification Management Measures



The SWRCB, CCC, and other State agencies have identified eight management measures (MMs) to address hydromodification sources of nonpoint pollution affecting State waters. Hydromodification includes modification of stream and river channels, dams and water impoundments, and streambank/shoreline erosion.

**California's hydromodification management measures:**

**5.1 Channelization/Channel Modification**
- **A. Physical & Chemical Characteristics of Surface Waters**
- **B. Instream & Riparian Habitat Restoration**

**5.2 Dams**
- **A. Erosion & Sediment Control**
- **B. Chemical & Pollutant Control**
- **C. Protection of Surface Water Quality & Instream and Riparian Habitat**

**5.3 Streambank & Shoreline Erosion**
- **A. Eroding Streambanks & Shorelines**

**5.4 Education/Outreach**
- **A. Pollution Prevention/Education**

Channel modification activities are undertaken in rivers or streams to straighten, enlarge, deepen or relocate the channel. These activities can affect water temperature, change the natural supply of fresh water to a waterbody, and alter rates and paths of sediment erosion, transport, and deposition. Hardening the banks of waterways with shoreline protection or armor also accelerates the movement of surface water and pollutants from the upper reaches of watersheds into coastal waters. Channelization can also reduce the suitability of instream and streamside habitat for fish and wildlife by depriving wetlands and estuarine shorelines of enriching sediments, affecting the ability of natural systems to filter pollutants, and interrupting the life stages of aquatic organisms (USEPA, 1993).

Dams can adversely impact hydrology and the quality of surface waters and riparian habitat in the waterways where the dams are located. A variety of impacts can result from the siting, construction, and operation of these facilities. For example, improper siting of dams can inundate both upstream and downstream areas of a waterway. Dams reduce downstream flows, thus depriving wetlands and riparian areas of water. During dam construction, removal of vegetation and disturbance of underlying sediments can increase turbidity and cause excessive sedimentation in the waterway.

The erosion of shorelines and streambanks is a natural process that can have either beneficial or adverse impacts on riparian habitat. Excessively high sediment loads resulting from erosion can smother submerged aquatic vegetation, cover shellfish beds and tidal flats, fill in riffle pools, and contribute to increased levels of turbidity and nutrients.

**Management Measures:**

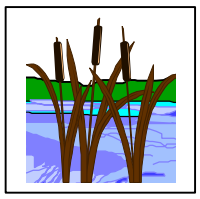
**Channelization/Channel Modification.** California's management measures for channelization and channel modification promote the evaluation of channelization and channel modification projects. Channels should be evaluated as a part of the watershed planning and design processes, including watershed changes from new development in urban areas, agricultural drainage, or forest clearing. The purpose of the evaluation is to determine whether resulting NPS changes to surface water quality or instream and riparian habitat can be expected and whether these changes will be good or bad. Existing channelization and channel modification projects can be evaluated to determine the NPS impacts and benefits associated with the projects. Modifications to existing projects, including operation and maintenance or management, can also be evaluated to determine the possibility of improving some or all of the impacts without changing the existing benefits or creating additional problems. In both new and existing channelization and channel modification projects, evaluation of benefits and/or problems will be site-specific.

**Dams.** The second category of management measures address NPS pollution associated with dams. Dams are defined as constructed impoundments that are either (1) 25 feet or more in height *and* greater than 15 acre-feet in capacity, or (2) 6 feet or more in height *and* greater than 50 acre-feet in capacity. MMs 5.2A and 5.2B address two problems associated with dam construction: (1) increases in sediment delivery downstream resulting from construction and operation activities and (2) spillage of chemicals and other pollutants to the waterway during construction and operation. MM 5.2C addresses the impacts of reservoir releases on the quality of surface waters and instream and riparian habitat in downstream.

**Streambank and Shoreline Erosion**. The third category of hydromodification measures addresses the stabilization of eroding streambanks and shorelines in areas where streambank and shoreline erosion creates a polluted runoff problem. Bioengineering methods such as marsh creation and vegetative bank stabilization are preferred. Streambank and shoreline features that have the potential to reduce polluted runoff shall be protected from impacts, including erosion and sedimentation resulting from uses of uplands or adjacent surface waters. This MM does not imply that all shoreline and streambank erosion must be controlled; the measure applies to eroding shorelines and streambanks that constitute an NPS problem in surface waters.

**Education/Outreach.** MMs 5.4A and 5.4B focus on the development and implementation of pollution prevention and education programs for agency staffs and the public, as well as the promotion of assistance tools that emphasize restoration and low-impact development. Education, technical assistance, incentives, and other means can be used to promote projects that reduce NPS pollutants, which retain or re-establish natural hydrologic functions (e.g., channel restoration projects and low-impact development projects), and/or which prevent and restore adverse effects of hydromodification activities.

# CAMMPR FACT SHEET No. 6
# Wetlands and Riparian Areas Management Measures



**California's management measures for wetlands and riparian areas and vegetated treatment systems:**

**6A. Protection of Wetlands & Riparian Areas**

**6B. Restoration of Wetlands & Riparian Areas**

**6C. Vegetated Treatment Systems**

**6D. Education/Outreach**

The SWRCB, CCC, and other State agencies have identified four management measures (MMs) to promote the protection and restoration of wetlands and riparian areas and the use of vegetated treatment systems as means to control nonpoint sources of pollution. Wetlands and riparian areas reduce polluted runoff by filtering out runoff-related contaminants such as sediment, nitrogen and phosphorus; thus maintaining the water quality benefits of these areas is important. These areas also help to attenuate flows from higher-than-average storm events. This protects downstream areas from adverse impacts such as channel scour, erosion and temperature and chemical fluctuations. Changes in hydrology, substrate, geochemistry, or species composition can impair the ability of wetland or riparian areas to filter out excess sediment and nutrients, and so can result in deteriorated water quality. The following activities can cause such impairment: drainage of wetlands for cropland, overgrazing, hydromodification, highway construction, deposition of dredged material, and excavation for ports and marinas.

**Management Measures:**

- **Wetlands/Riparian Areas Protection**. Implementation of MM 6A is intended to protect the existing water quality improvement functions of wetlands and riparian areas as a component of NPS programs.

- **Wetlands/Riparian Areas Restoration.** Wetlands and riparian area restoration (MM 6B) refers to the recovery of a range of previously-existing functions by reestablishing hydrology, vegetation, and structure characteristics. Damaged or destroyed wetland and riparian areas should be restored where restoration of such systems will significantly abate polluted runoff.

- **Vegetated Treatment Systems.** MM 6C promotes the installation of vegetated treatment systems (e.g., artificial or constructed wetlands) in areas where these systems will serve a polluted runoff-abatement function. Vegetated filter strips and engineered wetlands remove sediment and other pollutants from runoff and wastewater, and prevent pollutants from entering adjacent waterbodies. Removal typically occurs through filtration, deposition, infiltration, absorption, adsorption, decomposition and volatilization.

- **Education/Outreach.** MM 6D promotes the establishment of programs to develop and disseminate scientific information on wetlands and riparian areas and to develop greater public and agency staff understanding of natural hydrologic systems—including their functions and values, how they are lost, and the choices associated with their protection and restoration.